

CLAIMS

WHAT IS CLAIMED IS:

1 1. A method for conducting an automated auction in a system including a plurality  
2 of bid entry terminals, each bid entry terminal operated by a bidder, and a bidding  
3 information processor, the bidding information processor being communicatively  
4 coupled to each bid entry terminal, the method comprising the steps of:

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6 a) transmitting a signal representing current bidding information from the  
7 bidding information processor to each of the plurality of bid entry terminals,  
8 the current bidding information including at least an indicator of a current  
9 price;

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11 b) displaying the current bidding information on each of the plurality of bid  
12 entry terminals;

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14 c) receiving a bid from participating bidders at the plurality of bid entry  
15 terminals, each bid representing the quantity of objects the bidder wishes to  
16 transact at the current price;

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18 d) transmitting a signal representing the bid from each bid entry terminal  
19 which received a bid;

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21 e) determining a quantity of objects which will be assigned to each bidder at  
22 the current price, based on the received bids, at the bidding information  
23 processor; and

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25 f) generating updated bidding information and repeating steps a) - e), if any  
26 objects remain available.

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1 2. The method of claim 1, wherein the determining step comprises the steps of:

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3 a) summing the quantities to be transacted by all bidders to determine a total  
4 quantity of objects desired at the current price;

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6 b) if the total quantity of objects to be transacted at the current price is  
7 greater than the current quantity of available objects, assigning objects to a  
8 bidder based on the bids of the other bidders and decreasing the current  
9 quantity of objects available;

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11 c) if the total quantity of objects to be transacted at the current price is not  
12 greater than the current quantity of available objects, assigning to each bidder a  
13 quantity of objects corresponding to each bidder's respective bid.

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1 3. The method of claim 2, wherein the step of assigning objects to a bidder based  
2 on the bids of the other bidders comprises the steps of:

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4 a) selecting for consideration a bidder not yet considered;

5 b) summing the quantities to be transacted by all bidders other than the  
6 bidder being considered;

7 c) if the quantity to be transacted by all bidders other than the bidder being  
8 considered is less than the current quantity of available objects, assigning the  
9 objects in excess of those to be transacted by all bidders other than the bidder

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10 being considered to the bidder being considered and subtracting those objects  
11 from the current quantity of available objects;

12 d) repeating steps a) - c) for each participating bidder.

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1 4. The method of claim 1, further including the step of limiting each bid entered by  
2 a bidder by the immediately preceding bid entered by that bidder.

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1 5. The method of claim 1, wherein the updated bidding information includes all  
2 bids received at the bidding information processor at the current price and further  
3 comprising the step of displaying all bids on all bid entry terminals.

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1 6. The method of claim 1, wherein the step of generating updated bidding  
2 information comprises the step of receiving, at the bidding information processor, an  
3 updated current price specified by an auctioneer.

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1 7. A method for conducting an automated auction in a system including a  
2 plurality of bid entry terminals, each bid entry terminal operated by a bidder, and a  
3 bidding information processor, the bidding information processor being  
4 communicatively coupled to each bid entry terminal, the method comprising the steps  
5 of:

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7 a) receiving transaction curve information from participating bidders at the  
8 plurality of bid entry terminals;

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10 b) transmitting a signal representing bidding information from the bidding  
11 information processor to each of the plurality of bid entry terminals, the current  
12 bidding information including at least an indicator of a current price;

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c) accessing the received transaction curve information at the bid entry terminal, extracting a bid corresponding to the current price and transmitting a signal representing the bid to the bidding information processor; and

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d) generating updated bidding information and repeating steps a) - c), if any objects remain available.

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8. The method of claim 7, wherein the step of generating updated bidding information comprises the step of receiving, at the bidding information processor, an updated current price specified by an auctioneer.

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9. The method of claim 7, further comprising the step of: before generating updated bidding information, determining a quantity of objects which will be assigned to each bidder, based on the received bids, at the bidding information processor.

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10. The method of claim 9, further comprising the step of determining a price for each object assigned equal to the current price at the time the object was assigned.

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11. The method of claim 9, further comprising the step of determining a price for all objects assigned equal to the current price at the time the last remaining available object is assigned.

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12. The method of claim 9, wherein the determining step comprises the steps of:

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a) summing the quantities to be transacted by all bidders to determine a total quantity of objects desired at the current price;

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b) if the total quantity of objects to be transacted at the current price is greater than the current quantity of available objects, assigning objects to a bidder based on the bids of the other bidders and decreasing the current quantity of objects available;

c) if the total quantity of objects to be transacted at the current price is not greater than the current quantity of available objects, assigning to each bidder a quantity of objects corresponding to each bidder's respective bid.

13. The method of claim 12, wherein the step of assigning objects to a bidder based on the bids of the other bidders comprises the steps of:

- a) selecting for consideration a bidder not yet considered;
- b) summing the quantities to be transacted by all bidders other than the bidder being considered;
- c) if the quantity to be transacted by all bidders other than the bidder being considered is less than the current quantity of available objects, assigning the objects in excess of those to be transacted by all bidders other than the bidder being considered to the bidder being considered and subtracting those objects from the current quantity of available objects;
- d) repeating steps a) - c) for each participating bidder.

14. The method of claim 7, wherein the transaction curves include demand curves which are constrained so that a quantity demanded at a price is not larger than a quantity demanded at a lower price.

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1 15. The method of claim 7, wherein the transaction curves include supply curves  
2 constrained so that a quantity offered at a price is not larger than a quantity offered at  
3 a higher price.

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1 16. The method of claim 7, wherein no information relating to previous bids  
2 entered at other bid entry terminals is displayed at a bid entry terminal.

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1 17. The method of claim 7, wherein no transaction curve information not necessary  
2 to determine the outcome of the auction is transmitted to the bidding information  
3 processor.

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1 18. The method of claim 7, wherein the transaction curve information comprises  
2 contingent transaction curves, the bidding information comprises bidding history  
3 information and wherein the accessing step comprises accessing the contingent  
4 transaction curves based on the bidding history information.

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1 19. The method of claim 7, wherein bidders are allowed to modify transaction  
2 curve information entered into the bid entry terminals, but which has not yet been  
3 accessed.

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1 20. A method for conducting an automated auction in a system including a  
2 plurality of bid entry terminals, each bid entry terminal operated by a bidder, and a  
3 bidding information processor, the bidding information processor being  
4 communicatively coupled to each bid entry terminal, the method comprising the steps  
5 of:

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- a) transmitting a signal representing current bidding information from the bidding information processor to each of the plurality of bid entry terminals;
- b) displaying the current bidding information on each of the plurality of bid entry terminals;
- c) allowing participating bidders to enter bids at the plurality of bid entry terminals, a bid indicating an object and an associated price;
- d) transmitting a signal representing a bid from each bid entry terminal which received a bid;
- e) determining whether any new bids were received, at the bidding information processor;
- f) if new bids were received, determining a quantity of objects which will be assigned to each bidder, based on the received bids, at the bidding information processor; and
- g) generating updated bidding information at the bidding information processor; and
- h) repeating steps a) - g), if any objects remain available.

1 21. The method of claim 20, wherein the determining step comprises the steps of:

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- a) selecting for consideration a bidder not yet considered;

- 4 b) summing the quantities demanded by all bidders other than the bidder  
5 being considered;
- 6 c) if the quantity demanded by all bidders other than the bidder being  
7 considered is less than the current quantity of available objects, assigning the  
8 objects in excess of those demanded by all bidders other than the bidder being  
9 considered to the bidder being considered and subtracting those objects from  
10 the current quantity of available objects;
- 11 d) repeating steps a) - c) for each participating bidder.

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1 22. The method of claim 20, wherein a number of objects on which a bidder is  
2 allowed to bid must not be larger than a number of objects on which the bidder was  
3 allowed to bid in an immediately preceding round.

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1 23. The method of claim 20, wherein a bid comprises an indication of a quantity of  
2 objects and a price associated with the quantity of objects.

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1 24. The method of claim 20, wherein a bid comprises a list of specific objects and  
2 a price associated with each object in the list.

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1 25. A system for conducting an automated auction comprising:

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3 a plurality of bid entry terminals, each bid entry terminal operated by a bidder;

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5 a bidding information processor, the bidding information processor being  
6 communicatively coupled to each bid entry terminal, comprising:

7 means for generating current bidding information, the current bidding  
8 information including at least an indicator of a current price.

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9 means, coupled to the generating means, for transmitting a signal  
 10 representing current bidding information from the bidding information  
 11 processor to each of the plurality of bid entry terminals,  
 12 means for receiving bids from the bid entry terminals, and  
 13 means for determining a quantity of objects which will be assigned to  
 14 each bidder at the current price, based on the received bids; and

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 16 each bid entry terminal comprising:

17 means for receiving a bid from a participating bidder, the bid indicating  
 18 a quantity of objects to be transacted at the current price,  
 19 means, coupled to the bid receiving means, for transmitting a signal  
 20 representing the bid to the bidding information processor,  
 21 means for receiving current bidding information from the bidding  
 22 information processor, and  
 23 means, coupled to the bidding information receiving means, for  
 24 displaying received bidding information.

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<sup>15</sup>  
~~26.~~ The system of claim <sup>65</sup>25, wherein the determining means comprises:

- a) a first summing means for summing the quantities of objects to be transacted by all bidders at the current price;
- b) a first comparing means, coupled to the first summing means, for comparing the summed quantity of objects to be transacted at the current price with the current quantity of available objects;

10 c) a first assigning means, coupled to the comparing means, for assigning  
11 objects to a bidder based on the bids of the other bidders and decreasing the  
12 current quantity of objects available, if the summed quantity of objects to be  
13 transacted at the current price is greater than the current quantity of available  
14 objects; and

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16 d) a second assigning means, coupled to the comparing means, for  
17 assigning to each bidder a quantity of objects corresponding to each bidder's  
18 respective bid, if the summed quantity of objects to be transacted at the current  
19 price is not greater than the current quantity of available objects.

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<sup>19</sup>  
~~27.~~

<sup>62</sup> <sup>17</sup>  
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The system of claim ~~25~~, wherein the first assigning means comprises:

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3 a) means for selecting for consideration a bidder not yet considered;

4 b) a second summing means, coupled to the selecting means, for summing  
5 the quantities to be transacted by all bidders other than the bidder being  
6 considered;

7 c) a second comparing means, coupled to the second summing means, for  
8 comparing the quantity to be transacted by all bidders other than the bidder  
9 being considered with the current quantity of available objects; and

10 d) a third assigning means, coupled to the comparing means, for assigning  
11 the objects in excess of those to be transacted by all bidders other than the  
12 bidder being considered to the bidder being considered and subtracting those  
13 objects from the current quantity of available objects, if the quantity to be  
14 transacted by all bidders other than the bidder being considered is less than the  
15 current quantity of available objects.

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1 <sup>20</sup>28. The system of claim <sup>63 17</sup>25, wherein each bid entered by a bidder is limited by the  
2 immediately preceding bid entered by that bidder.

1 <sup>21</sup>29. The system of claim <sup>63 17</sup>25, wherein the updated bidding information includes all  
2 bids received at the bidding information processor at the current price and a bid entry  
3 terminal comprises means for displaying all such bids.

1 <sup>22</sup>30. The system of claim <sup>63 17</sup>25, wherein the means for generating updated bidding  
2 information comprises means for receiving an updated current price specified by an  
3 auctioneer.

1 31. A system for conducting an automated auction comprising:  
2  
3 a plurality of bid entry terminals, each bid entry terminal operated by a bidder;  
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5 a bidding information processor, the bidding information processor being  
6 communicatively coupled to each bid entry terminal, comprising  
7 means for generating current bidding information, the current bidding  
8 information including at least an indicator of a current price,  
9 means, coupled to the generating means, for transmitting a signal  
10 representing current bidding information from the bidding information  
11 processor to each of the plurality of bid entry terminals,  
12 means for receiving bids from the bid entry terminals, and  
13 means for determining a quantity of objects which will be assigned to  
14 each, based on the received bids; and  
15  
16 each of the plurality of bid entry terminals comprising:

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17 means for receiving transaction curve information from a participating  
18 bidder,  
19 means for receiving current bidding information from the bidding  
20 information processor, and  
21 means, coupled to the transaction curve information receiving means  
22 and the bidding information receiving means, for accessing the received  
23 transaction curve information at the bid entry terminal, extracting a bid  
24 corresponding to the current price and transmitting a signal representing  
25 the bid to the bidding information processor.

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1 32. The system of claim 31, wherein the determining means comprises means for  
2 assigning a price to each object assigned which is equal to the current price at the time  
3 the object was assigned.

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1 33. The system of claim 31, wherein the determining means comprises means for  
2 assigning a price to each object assigned which is equal to the current price at the time  
3 the last remaining available object is assigned.

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1 34. The system of claim 31, wherein the determining means comprises:

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3 a) a first summing means for summing the quantities of objects to be  
4 transacted by all bidders at the current price;

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6 b) a first comparing means, coupled to the first summing means, for  
7 comparing the summed quantity of objects to be transacted at the current price  
8 with the current quantity of available objects;

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10 c) a first assigning means, coupled to the comparing means, for assigning  
11 objects to a bidder based on the bids of the other bidders and decreasing the  
12 current quantity of objects available, if the summed quantity of objects to be  
13 transacted at the current price is greater than the current quantity of available  
14 objects; and

15  
16 d) a second assigning means, coupled to the comparing means, for  
17 assigning to each bidder a quantity of objects corresponding to each bidder's  
18 respective bid, if the summed quantity of objects to be transacted at the current  
19 price is not greater than the current quantity of available objects.

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1 35. The system of claim 34, wherein the first assigning means comprises:

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3 a) means for selecting for consideration a bidder not yet considered;

4 b) a second summing means, coupled to the selecting means, for summing  
5 the quantities to be transacted by all bidders other than the bidder being  
6 considered;

7 c) a second comparing means, coupled to the second summing means, for  
8 comparing the quantity to be transacted by all bidders other than the bidder  
9 being considered with the current quantity of available objects; and

10 d) a third assigning means, coupled to the comparing means, for assigning  
11 the objects in excess of those to be transacted by all bidders other than the  
12 bidder being considered to the bidder being considered and subtracting those  
13 objects from the current quantity of available objects, if the quantity to be  
14 transacted by all bidders other than the bidder being considered is less than the  
15 current quantity of available objects.

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3 a plurality of bid entry terminals, each bid entry terminal operated by a bidder;  
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 5 a bidding information processor, the bidding information processor being  
 6 communicatively coupled to each bid entry terminal, comprising  
 7 means for generating current bidding information,  
 8 means, coupled to the generating means, for transmitting a signal  
 9 representing current bidding information from the bidding information  
 10 processor to each of the plurality of bid entry terminals,  
 11 means for receiving bids from the bid entry terminals,  
 12 a first determining means, coupled to the bid receiving means, for  
 13 determining whether any new bids were received, and  
 14 a second determining means, coupled to the first determining means, for  
 15 determining a quantity of objects which will be assigned to each bidder  
 16 in the current round, based on the received bids, if new bids were  
 17 received; and

18  
19 each bid entry terminal comprising:

20 means for receiving a bid from a participating bidder, the bid indicating  
 21 an object and an associated price,  
 22 means, coupled to the bid receiving means, for transmitting a signal  
 23 representing the bid to the bidding information processor,  
 24 means for receiving current bidding information from the bidding  
 25 information processor, and  
 26 means, coupled to the bidding information receiving means, for  
 27 displaying received bidding information.

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 1  The system of claim 42, wherein the determining step comprises the steps of:

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a) a first summing means for summing the quantities of objects to be transacted by all bidders at the current price;

b) a first comparing means, coupled to the first summing means, for comparing the summed quantity of objects to be transacted in the current round with the current quantity of available objects;

c) a first assigning means, coupled to the comparing means, for assigning objects to a bidder based on the bids of the other bidders and decreasing the current quantity of objects available, if the summed quantity of objects to be transacted in the current round is greater than the current quantity of available objects; and

d) a second assigning means, coupled to the comparing means, for assigning to each bidder a quantity of objects corresponding to each bidder's respective bid, if the summed quantity of objects to be transacted in the current round is not greater than the current quantity of available objects.

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<sup>27</sup>  
~~44~~. The system of claim <sup>64 23</sup>~~42~~, wherein a number of objects on which a bidder is allowed to bid must not be larger than a number of objects on which the bidder was allowed to bid in an immediately preceding round.

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<sup>26</sup>  
~~45~~. The method of claim <sup>64 23</sup>~~42~~, wherein a bid comprises an indication of a quantity of objects and a price associated with the quantity of objects.



- B.
- 1 <sup>29</sup>~~46~~. The method of claim ~~42~~<sup>64</sup> <sup>23</sup>, wherein a bid comprises a list of specific objects and
  - 2 a price associated with each object in the list.

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ADD  
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